



PATIENT

Dexter Diaz

SPECIES

Canine

BREED

Yorkshire Terrier Mix

SEX

Neutered Male

AGE

12 Years 10 Months

WEIGHT

13.2

INTERPRETED BY

James Wood, DVM,
DACVIM (Cardiology)

IMAGING PERFORMED BY

Christensen

HOSPITAL NAME

Tranquility VC

REFERRING VET

Dr. Christensen

INVOICE

37157

DATE

5/20/26

PRESENTING CLINICAL SIGNS

History: Presented for routine recheck echo.

Current medications documented by the owner: pimobendan (Vetmedin) 1.875 mg PO BID, clomipramine (noted as Clomacom) 10 mg PO SID, enalapril 2.5 mg PO BID, furosemide 6.25 mg PO BID, spironolactone 6.25 mg PO BID

Diet: Hill's Prescription Diet GI Biome with Fiber Care, chicken flavor dry.

Previous bicavitary ultrasound on 11/12/2025 reportedly showed severe mitral regurgitation that was unchanged from prior, with no additional issues.

Abnormal PE/Chem/CBC/UA Results: Blood pressure measured today at 150/49 mmHg with MAP 72 mmHg. Very nervous BW done last month was very stable.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	LA long axis	LAmxN	Ao long axis	LA/AO (Heart Base; Swe, short axis)	LA/AO long axis	LVIDd	LVIDdN
NORMAL PARAMETER		<1.57		<1.6	<2.5		<1.7
PATIENT	2.91	1.68	--	1.83	--	2.56	1.45
CARDIAC PARAMETERS	Body Weight (kg)	AV VMAX (m/s)	PV MAX (m/s)	MR VMAX (m/s)	TR VMAX (m/s)	FS (%)	LVIDsN
NORMAL PARAMETER		0.7-1.7	0.7-1.6			22 - 49%	<0.9
PATIENT	6.0	1.21	0.92	4.63	1.97	31.3	0.87
CARDIAC PARAMETERS	HR (bpm)	MV E (m/s)	MV A (m/s)	MV E/A (m/s)	EF (%)	IVSdN	LVFWdN
NORMAL PARAMETER						<0.6	<0.6
PATIENT	80	--	--	--	93	0.5	0.43

Cardiac Presentation



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The mitral valve leaflets are severely thickened with severe central mitral valve insufficiency. There is moderate bileaflet prolapse. The left atrium is moderately dilated. The left ventricular diastolic dimension measures normal today. Diastolic function was not assessed. Normal global left ventricular systolic function. There is normal right atrial size with moderate tricuspid regurgitation. There is no prolapse of the tricuspid valve leaflets and no evidence of pulmonary hypertension based upon tricuspid regurgitant velocities. The right ventricle subjectively appears normal in structure and function. The aortic and pulmonary valves have normal appearance and motion, and the corresponding outflow velocities are within normal limits. There are mild pulmonary and trivial aortic valve insufficiencies. The aorta appears normal. The pulmonary artery and associated branches appear normal. There is no evidence of pleural effusion, pericardial effusion, or intracardiac masses.

ULTRASONOGRAPHIC FINDINGS

- Myxomatous mitral valve disease, ACVIM stage C
- Left sided congestive heart failure- clinically compensated
- Moderate tricuspid valve regurgitation
- Mild aortic insufficiency
- Mild pulmonary valve insufficiency

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The echocardiogram showed evidence of severe myxomatous mitral valve disease. There is moderate left atrial enlargement with normal LV dimension today. Based on the history, the patient has had a prior episode of CHF, but the heart failure is currently well controlled on the current doses of pimobendan and furosemide. No adjustment to the current medications are recommended. Recheck thoracic radiographs, BP and renal panel with electrolytes every 3-4 months. Recheck echocardiogram every ~6 months or sooner if concerns arise.

Monitoring

It is very important to catch any clinical signs concerning for emerging CHF as early as possible. The client should be closely monitoring and ideally tracking the sleeping respiratory rate. The sleeping RR should be between 10-30 breaths per minute or less (ideally in the teens or low 20s). **If the resting RR is trending upward**, consistently >35/min while resting/sleeping AND/OR there is a new or progressive cough, the patient should be seen urgent for evaluation to determine if CHF is developing. *RECHECK ASAP for thoracic radiographs if there is a new cough or increase in RR to detect early CHF and avoid ER presentation**

DIET Salt Restriction

Moderate sodium restriction may be beneficial in managing this stage of cardiac disease. High-salt treats or diets should be avoided. If interested, further information on moderate sodium restricted diets for dogs with advanced cardiac disease can be found at:

<https://heartsmart.vet.tufts.edu/nutrition/>.

Surgical Options



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Historically, degenerative mitral valve disease in dogs has been managed with medical therapy aimed at controlling clinical signs and slowing progression. In recent years, surgical procedures have become available for select patients. Open-heart mitral valve repair is offered only at a small number of centers worldwide, including the University of Florida in the United States and specialized institutions in the UK and Japan, where the largest number of these procedures have been performed. While great success can be achieved with open-heart surgery, it involves notable cost, invasiveness, and travel to a center that offers these procedures. A less invasive option is transcatheter edge-to-edge repair (TEER), which uses a catheter-based approach to reduce mitral valve regurgitation without the need for open-heart surgery. This procedure is available only at select centers, with Colorado State University having completed the most TEER procedures in dogs to date. In addition, palliative procedures such as left atrial decompression (LAD) can be performed in certain cases, typically once medical therapy has been exhausted. These are not curative but may help relieve symptoms by reducing pressure within the left atrium and lungs, thereby improving comfort and quality of life for patients with advanced disease/end-stage CHF.

Anesthesia

There is a severely increased risk to anesthesia given the underlying cardiac disease. Anesthesia should only be pursued for medically necessary procedures with client understanding of the risks.

On top of the increased intraoperative risks (hypotension, hypoventilation, hypothermia) with cardiac disease, there is an increased risk of precipitating CHF. With this understanding, anesthesia can be pursued pending normal labwork, with appropriate precautions for strictly necessary procedures.

Baseline thoracic radiographs are recommended within 1-2 months of anesthesia, not only to rule out CHF, but to serve as a baseline for comparison if a new cough or other respiratory signs develop after anesthesia. Pimobendan can be given three times daily for 2-3 days prior to and following anesthesia to support cardiac function. The morning dose of any ACEi should be skipped the day of anesthesia.

Recommendations for pre-operative sedation include an opiate (such as butorphanol) combined with a benzodiazepine (such as midazolam or diazepam). It is recommended to avoid alpha 2 agonists, as these agents can cause vasoconstriction and worsen MR, exacerbating left atrial hypertension. These effects persist for hours even after reversal. Etomidate or alfaxalone are preferred induction agents. Propofol can be considered for induction; however, is less preferred to alfaxalone or etomidate. Ketamine should ideally be avoided. Atropine should be used as needed for blood pressure support when bradycardia is present during periods of hypotension.

Full cardiac precautions should be taken with regards to monitoring (ideally CO₂, SpO₂, ECG, and BP monitoring) and judicious IV fluid administration (avoid volume overload or underload/hypotension – 1- 2 mL/kg/hr surgical fluid rate is recommended). All other methods of blood pressure support should be utilized **instead of fluid boluses** (i.e. reduce inhalant/use MAC reducing agents, consider anticholinergics if bradycardia + hypotension), and the use of parenteral inotropes should be considered (i.e. dobutamine or dopamine).



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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

James Wood, DVM, DACVIM (Cardiology)

info@SonoPath.com